DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-016541
Date Inspected: 28-Aug-2010

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 630
OSM Departure Time: 1500
Location: Job Site

CWI Name: See below

Inspected CWI report:	☑ Yes	☐ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
				Approved WPS:	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: SAS OBG

Summary of Items Observed:

The Quality Assurance (QA) Inspector, Rick Bettencourt was on site at the job site between the times noted above. The QA Inspector was on site to randomly observe the in process welding and inspection of the weld joints identified as stiffeners, 5E/6E hole restoration, and the following observations were made:

4E/5E-E2

Upon the arrival of the QA Inspector it was noted the ABF welder Fred Kaddu was on site to perform excavations and weld repairs from previously rejected and indicated weld defects. The QA Inspector randomly observed the SE QC Inspector Steve McConnell was present at the time of the excavations. The QA Inspector randomly observed the ABF welder Fred Kaddu begin excavating the ultrasonic testing (UT) reject utilizing a burr bit grinder. The QA Inspector noted the original 1st UT rejection was indicated at 13mm in depth. After the excavation was complete the QA Inspector noted the dimensions of the excavation were 13mm X 20mm X 13mm. The QA Inspector randomly observed the second UT excavation was performed in the same manner as described above and noted the excavation dimensions were 75mm X 15mm X 9mm. The QA Inspector randomly observed the QC Inspector perform magnetic particle testing (MT) of the excavations and noted no relevant indications were located at the time of the testing. The QA Inspector observed an ABF welder, preheat the isolated area to be welded to the minimum required preheat of 150°F. After the minimum required preheat was achieved, the QA Inspector randomly observed the ABF welder begin the weld repair utilizing the shielded metal arc welding (SMAW) process. The QA Inspector randomly observed the ABF welder utilizing 1/8” E7018 low hydrogen electrodes with 125 Amps. The QA Inspector noted the SMAW parameters and minimum required preheat appeared to be in general compliance with ABF-WPS-D1.5-1000-repair. The QA Inspector noted the repairs were completed on the QA Inspectors shift.

1E-pp8.5-E4-2

The QA Inspector randomly observed the ABF welder identified as Wai Kitlai performing the flux cored arc welding cover pass of the above identified complete joint penetration (CJP) groove weld. The QA Inspector noted the weld joint was started on Friday 8-27-10 and the minimum required preheat of 200°F did appear to be maintained upon the arrival of the QA Inspector in the am. The QA Inspector noted the weld joint appeared to be approximately 75% complete upon the arrival of the QA Inspector. The QA Inspector randomly observed the Smith Emery (SE) Quality Control (QC) Inspector Mike Johnson was on site to monitor and record the in process welding of the above identified weld joint. The QA Inspector randomly observed and noted the FCAW parameters were 250 Amps and 23 Volts with a travel speed of 250mm/min. The QA Inspector noted the travel speed appeared to be in general compliance with the contract requirements. The QA Inspector randomly observed the cover pass was completed at 0845. The QA Inspector noted the 3 hour post weld heat treat was started immediately and was maintained for 3 hours at 200°F.

1E-pp8.5-E3-3

The QA Inspector randomly observed the ABF welder identified as James Zhen begin setting up to perform the SMAW root pass. The QA Inspector randomly observed the ABF welder perform some base metal grinding of the top deck plate insert prior to commencing the SMAW root pass. The QA Inspector randomly observed the ABF welder grind the precut bevels from 30° to 45°, the QA Inspector randomly verified the bevel angles and noted they appeared to be in general compliance with the contract requirements. The QA Inspector randomly observed the ABF welder had previously installed ceramic backing to the underside of the top deck plate and held in place with adhesive. The QA Inspector randomly observed the ABF welder had set the circular deck insert onto the ceramic backing and held in place utilizing magnets. The QA Inspector performed a random visual inspection of the fit up and noted the root opening, bevel angle and planar alignment of the complete joint penetration (CJP) groove weld appeared to meet the general requirements of the contract documents. The QA Inspector randomly observed the ABF welder preheat the area to approximately 100°F prior to performing any SMAW. After the minimum required preheat had been achieved, the QA Inspector randomly observed the ABF welder begin the SMAW root pass. The QA Inspector noted the SE QC Inspector Mike Johnson was on site to monitor and record the in process production welding at the above identified location. The QA Inspector randomly observed the SMAW parameters to be approximately 130 Amps with 5/32” E7018 low hydrogen electrodes. The QA Inspector randomly observed the in process welding parameters and dimensional tolerances appeared to be in general compliance with the approved welding procedure identified as ABF-WPS-D1.5-1050-A. The QA Inspector noted the ABF welder did compete the SMAW root pass. The QA Inspector noted James Zhen is welding the root passes and then moving on to fit and weld the next insert root pass. The QA Inspector noted ABF is utilizing another welding to preheat the material to 200°F and continue the weld joint with FCAW.

1E-pp9.5-E4-1

The QA Inspector randomly observed the ABF welder identified as Wai Kitlai performing the flux cored arc welding fill/cover pass of the above identified CJP groove weld. The QA Inspector noted the weld joint was started previously and the root pass was completed with SMAW. The QA Inspector noted the weld joint appeared to be approximately 30% complete upon the arrival of the QA Inspector. The QA Inspector randomly observed the SE QC Inspector Mike Johnson was on site to monitor and record the in process welding of the above identified weld joint. The QA Inspector randomly observed and noted the FCAW parameters were 253 Amps and 23 Volts with a travel speed of 265mm/min. The QA Inspector noted the travel speed appeared to be in general compliance

with the contract requirements. The QA Inspector noted the weld joint was not completed on the QA Inspectors shift.

3E/4E-A-LS-4/5

Upon the arrival of the QA Inspector at the above identified location, the QA Inspector randomly observed the ABF welder Hua Qiang Hwang preparing to continue the SMAW weld joint restoration. The QA Inspector randomly observed the ABF welder preheat the material to 200°F utilizing a rosebud torch. The QA Inspector noted the SE QC Inspector John Pagliero was on site monitoring the in process preheats and welding parameters of approved welding procedure identified as ABF-WPS-D1.5-1012-3. The QA Inspector performed a random visual inspection of the above identified stiffener plates and noted an 8mm-11mm gap was still present at the time of the QA Inspectors arrival. The QA Inspector noted additional welding and grinding would be required prior to production welding. The QA Inspector randomly observed the ABF welder remove the E9018 1/8” electrodes from the rod container at 0730. The QA Inspector noted the maximum exposure time for the above identified electrodes is on hour. The QA Inspector randomly observed the ABF welder continue the SMAW butter passes on the above identified weld joint. The QA Inspector noted the SMAW parameters were 130 amps and appeared to be in general compliance with the above identified WPS. The QA Inspector noted the ABF welder continued performing the SMAW butter passes from the remainder of the QA Inspectors shift.

Summary of Conversations:

No pertinant conversation noted.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916)-813-3677, who represents the Office of Structural Materials for your project.

Inspected By:	Bettencourt,Rick	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer